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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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EDITORIAL NOTES.

Comparative pathology is still a young science, but it affords a wider interest perhaps than any other to those concerned with the health of man and animals. Upon a correct appreciation of its principles depends our success not only in the cure but in the prevention of a large class of the most fatal maladies. It appeals equally to the Sanitarian, the Physician, the Veterinarian, and the Scientific enquirer. In fact it is difficult to imagine how the science can advance with any exactness and precision unless it be assisted by the experience possessed by each of these professions. No single one of them can possibly bring to bear the knowledge gained by all in their different positions. The scientific worker cannot bring to bear on his research the clinical experience possessed by the men who are daily associated with cases of disease. The physician has a practical knowledge of the diseases of man and the veterinarian of the diseases of the lower animals, which surely cannot be dispensed with. They both recognise symptoms with a precision only attainable by repeated observation and careful study. They both are able to refer to outbreaks of disease under varying conditions and to supply facts bearing upon their etiology and dissemination.

In the case of diseases common to man and animals and capable of transmission from one to the other both physician and veterinarian must interchange observations if they wish to understand the malady in its widest aspect. For either to neglect the acquired experience of the other is simply to narrow their field of action, and to waste time and opportunities which cannot be recalled.

Some maladies, common to man and animals, have been investigated on the joint method we suggest with the very best results. The comparative pathology of glanders, rabies, and variola has lost nothing but gained much by the combined efforts of physicians, veterinarians, and laboratory experimenters. Some maladies, on the other hand, have been made more obscure by the attention bestowed upon them by zealous but incompetent advisers. The cattle-plague, for instance, had very little light thrown upon its pathology by the efforts of medical men, whilst its prevention and eradication was seriously delayed by their good intentions and rash speculations.

At the present time it cannot be claimed that Surgeon-Major Gordon does more than help to obscure the nature of rabies, whilst Surgeon-Major Ince in his attempts to mislead the Royal Agricultural Society on pleuro-pneumonia only succeeds in gaining pity and contempt.

Far different is it when such men as Dr. Klein and the medical officers of the Local Government Board conduct enquiries into outbreaks of disease. Their conclusions are by many at once accepted as facts, and practical action is based upon them. Scarlet fever in man has by them been traced to some indefinite disease affecting cows' udders. Typhoid fever was seriously considered as a result of swine-fever, and now diphtheria, we are told, may be due to some sort of lung disease affecting cats. After the really painful *exposé* made of the Hendon cow disease, and its supposed origination of scarlet fever, it might have been expected that men engaging in a research on some disease affecting man and animals, would at least consult skilled veterinarians to verify their diagnosis and supply whatever clinical records they may possess.

At the general meeting of the Royal Agricultural Society, Surgeon-Major Ince moved an amendment to the report, objecting to the Council's approval of the new Pleuro-pneumonia Bill. In the course of a long speech "he expressed his belief that there had not been a case of true genuine virulent pleuro-pneumonia in this country for many, many months, if not years." It would not be surprising if the ideas expressed by a medical man at such a meeting found some acceptance, but we are glad to believe that no one present had any hesitation in crediting the whole speech to profound ignorance.

Next week is to be a busy one in London, and full of interest to the veterinary surgeon. On Monday The Worshipful Company of Farriers hold a meeting at the Mansion House at 3 p.m. to promote their scheme for the Registration of farriers or shoeing-smiths. The Lord Mayor will preside, and from a long list of noblemen and gentlemen who have expressed approval some will attend and speak. On Tuesday a Special Meeting of Council will be held at Red Lion Square to settle the proposed regulations for the Matriculation Examination. There will also be the election of a President and six Vice-Presidents to attract members to town. On Wednesday an opportunity is afforded at Epsom for the study of the horse in motion, and other things. On Saturday the Royal Veterinary College will be the scene of an interesting function, when H.R.H. the Duke of Cambridge will lay the foundation stone of a new range of buildings which, when finished, will afford material conveniences for work and teaching, that will add to the already high positionof the Camden Town School.

CASES AND ARTICLES.

REMARKS ON THE LATE EPIDEMIC OF INFLUENZA.

By James Anderson, M.R.C.V.S.,
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The late epidemic of influenza, or as some call it pinkeye, which spread so rapidly over the country, and in its transitory stay attacked so many horses, I fear has left behind it certain sequels of a more or less grave nature.

The principal untoward results which have come immediately under my observation, are, hepatization of lung tissue; disease of the heart; and enlargement of the kidneys; and in several instances, a general stiffness over the back and lumbar region, whether of a rheumatic nature or not I am unable to say. I at least have no doubt that the kidneys always participate in the disease, and I have seen cases in which not only were the kidneys involved but the morbid process had extended itself into the surrounding textures and especially around the delicate psoae muscles where serous infiltrations frequently took place. Is it not possible that changes such as these would be very apt to leave a permanent impairment of function? Is it not possible that the muscular stiffness which is apt to remain in the lumbar region after recovery from the fever may be due to the effects of these infiltration? I am inclined to think that has something to do with it. In every post-mortem examination which I have made it was usual to find amongst other lesions, the psoae muscles more or less congested, and the kidneys greatly increased in size and saturated with serum, so much so that on cutting through their substance the serum would ooze out as the juice does out of a ripe melon on being divided. It was quite common to meet with cases suffering from the late epidemic, and even where recovery took place, that severe paroxysms would frequently take place and such sudden exacerbations of symptoms as to appear alarming. The patient would all at once tremble like an aspen leaf, break out into a most profuse perspiration, which after lasting several hours would gradually subside, when the animal would fall into a state of lassitude greater than previous to the fit coming on, and the pulse would become so weak as to be almost imperceptible. I always considered that these symptoms indicated affection of the kidneys, and the impression was left on my mind that their morbid condition would be the same as in those fatal cases which I had the opportunity of making palpable by dissections. In treating these paroxysms I always directed my aid to the defaulting kidneys, which frequently was beneficial.

Whilst visiting slaughter houses in the city for the purpose of making autopsies on my own fatal cases, I generally found the floors of these horse-slaughtering establishments covered with the carcases of the victims of influenza; and for my own information would frequently remain to examine the lesions of some of the others as well. In doing so I particularly noticed that however much the morbid appearances differed with each other in lesions of smaller importance, the heart, lungs and kidneys invariably agreed, in displaying the same phenomena of disease. Amongst the cadaveric lesions of each, the heart showed the effects of having suffered from carditis, it was flaccid, the blood remaining in it was diffluent, deposits of lymph existed in and plugged some of the small blood vessels in the immediate neighbourhood, thickening of the endo cardium, thickening of the valves, ecchymosed spots throughout its whole extent, with indelible stains imprinted within its cavities by the disintegrated blood which has been circulating through it. The lungs of each animal were more or less congested, emphysematous, and in some cases hepatised, especially a small portion of the left, seldom the right lung showed hepatization, besides ecchymosed spots could be seen on the surface of the lungs. Gangrene, although it occasionally took place, was much more seldom met with than the other lesions which I have mentioned. The kidneys presented appearances similar to what I have already described.

After a more or less prolonged period of latency the symptoms of this febrile disease are ushered in by vague phenomena; comprehending extreme dejection, hanging of the head, watery discharge from eyes, eyelids congested and swollen, the mucous membrane of which are injected; sore throat, swelling of legs, horripilation. A great many cases suffered very slightly from these symptoms alone and recovered with very little treatment, only requiring rest, comfort, simple diet and perhaps the repeated application of cantharides oil to the throat, and the administration of a little fever medicine. Others however from the debut of the fever showed besides these precursory symptoms others of a more serious nature, such as laboured breathing, imperceptible pulse, trembling, increase of bodily temperature, the themometer often denoting 105—profuse perspirations, stiffness over the hind quarters and lumbar region, stiff gait in walking, &c. sometimes an exacerbation of these symptoms came on, when the pulse often rose above 100 per minute, the urine frequently ejected becomes of a very dark colour, sometimes grumous.

The death struggles are most violent and grievous to behold, and for several hours before death, the action of the heart is most tumultuous, and on applying the hand to the left side while the animal is lying moaning the vibration of heart against the side may be felt to extend over a large surface; the pulse is full and throbbing, and the symptoms remind one of an animal dying from pyæmia.

It is known generally that in a horse dying from pyæmia, deposits and pus are sometimes found in the heart, and that organ becomes inflamed before death. The same takes place in charbon; acute glanders also gives rise to ecchymosed spots, and all blood poisons and miasmas leave lesions in the heart somewhat similar to the late epidemic, which coincidence points in favour of the action of a blood poison in influenza.

Auscultation in cases of the late epidemic proved to be of paramount value in the prognosis as well as the treatment to be adopted.

Exploring by ausculation will yield more valuable information, through the presence of abnormal sounds in the heart than any that may be caused in the lungs; for instance—it was common to find on applying the ear to the left side, in the region of the heart, instead of hearing the normal harmonious sounds of the rhythms produced by the action of the systole and diastole, which is considered to correspond to the pronouncing of the words lub-dub, one would often hear instead more analagous to the pronouncing of lub-dub-dub-dub followed by a cooing sound, and the interval of four moments. Sometimes I have recognised a crackling sound as if produced by the shifting of a small quantity of air, either in the auricle or ventricle, or both.

These symptoms, along with an intermittent pulse were not the most unfavourable; but rather was a most hopeful indication that the disease, then at its crisis, was about to take favourable turn. Always when I felt an intermittent pulse, and these abnormal sounds in the rhythms, I felt sanguine that the case would ultimately pull through. On the other hand when the pulse remained imperceptible and the rhythms of the heart so faint as to be inaudible, I had only faint hope of recovery, and the acute pain and death struggles were not far distant. For the sole purpose of rousing the heart's action to such a degree as to improve the tone of the rhythms so that they may be heard, I have frequently applied counter-irritants to the left side, over the region of that organ, with good results.

In the treatment of this disease it is a matter of great importance to get hold of the case in time, so that the animal may get rest and comfort before his strength gives way. This however in a great many cases cannot be accomplished, as those proprietors who have only one or two horses are not often prepared to meet the exigencies of a serious case on hand. By mistaking it for a common cold, dejection and lassitude have taken place often before the "Vet." is called in. In large horse establishments where the "V.S." has a contract to call daily and inspect the animals it will be to his interest to isolate and treat any animal showing the least suspicious symptoms, when he has the advantage of having his professional skill brought into play early in the disease; and will be enabled to protect the other horses not yet laid down. On the invasion of influenza in a stable, it is well to use prophylactic means, for the benefit of those which have not been laid off work although, presumably, the poison may already be in their system. If such prophylactic treatment as the free use of disinfectants, washing the stalls, &c., and the administration of tonics such as sulphate of iron, hyposulphite of soda, does not wholly succeed by preventing the spread of the disease, their laudable effects in a chemical point of view, and their physical effects on the blood will do much to mitigate its severity, and more or less fortify the patient's system against the action of the poison.

Without going into full details regarding the therapeutic treatment of this disease allow me to make a few remarks on certain principles of treatment, during certain symptoms of the disease, which I have found of some benefit, not presuming for a moment that it was the most judicious, but under the impression that improvements followed their adoption.

I found that in most cases the patients had no appetite, and would day after day refuse all kinds of solid food; the next best thing to be done was to offer nutritious drinks such as oatmeal in water and a small quantity of milk and sugar. As a rule the patients were not often thirsty; but by withholding water alone, they would drink the thin gruel. I do not approve of pouring gruels down their throats.

After trying a great many different therapeutic agents to reduce the febrile symptoms of the disease I thought most benefit accrued from the frequent administration of chlorate of potash dissolved in a pint of water, with the addition of ten drops of Fleming's tinct aconite.

When the patient was very weak and the pulse imperceptible, besides using the fever draughts I would give small and repeated doses of stimulants such as wine, whiskey, sp. nit. ether with benefit. Some of the worst cases which recovered got no other medicines than whiskey in repeated large doses, aconite, and large doses of chlorate of Potash. With regard to external application I found Cantharides oil applied to the throat and sides of the chest, reduced acetic acid to the lumbar region, or other stimulating liniments were sometimes useful and especially the application of acetic acid over the loins.

When the pulse is imperceptible and the rhythms of the heart so faint as to be inaudible, by applying a strong cantharides blister, or vesicating liniment over the region of the heart on the triceps muscle and behind the elbow of the left side will always do much good, and never any injury. Repeated applications of soap liniment to the same region frequently suffices to restore the rhythms.

TUBAL FŒTATION,

By J. H. Carter, F.R.C.V.S., Burnley.

In last week's issue of your valuable Journal is an interesting article entitled "Extra-uterine Gestation" by Mr. James Anderson, of Glasgow, in which he states he has never heard of a case of gestation taking place within a fallopian tube in the lower animals. I would like respectfully to call his attention to a case recorded by me in the *Veterinary Journal*, Vol. XX, page 402, 1885, entitled, a Case of Tubal Fœtation in a Bitch.

The animal in question was a very valuable mastiff bitch, the property of a Mr. Robinson, of Rose Grove, near Burnley.

I shall be pleased to enumerate that portion of

the post-mortem examination which is most interesting, viz. of the Uterus and Fallopian Tubes.

The Uterus.—This organ was very much distended, and upon laying it open there was revealed a great quantity of purulent matter, which made its escape; the mucous membrane was flabby, pale, and thickened, and had numerous short hairs (of a fawn colour) firmly embedded in its substance.

The left Fallopian Tube was very much elongated and distended in its centre, resembling somewhat in shape a diminutive horse's stomach.

Upon opening this distended portion, another quantity of purulent fluid made its escape, along with several bones all completely ossified, and partially covered with hair (of a fawn colour.)

There were six bones in all, four of them being cranial, one humeral, and one sacral. The mucous membrane lining the tube was very much thickened, corrugated, and deeply grooved.

The muscular coats of both vagina, and left fallopian tube were very much hypertrophied. From the condition of the bones found the fœtus must have reached a high state of development; they (the bones) were presented to Mr. J. Bland Sutton, by request.

OUR RECENT MEETING.

I am not one who often rushes into print, but, being a listener at the annual meeting, and then reading both the remarks of yourself and Mr. Greaves on what took place, if you will kindly allow me a short space to record my impressions I shall be obliged.

In the first place there seems to have been a mistake as far as the time of meeting,—12 o'clock was the advertised time, but it was not till 1.30 that the chair was taken—thus causing inconvenience to many who, like myself, had other business to attend to.

The next matter that impressed me was the total disregard of the chair and its ruling, one member especially constantly interrupting the business of the meeting.

Now it was plain enough for all those present to see that there was an undercurrent of personal feeling in all this. If cause there be for this feeling let it be thrashed out in other and more fitting places, and not thrust in front to the obstruction of business at our annual meetings. To my mind the chairman did not rise to the occasion, or he would have immediately put a stop to it.

Well, after a short calm another member gets on his legs, and in spite of chair and chaff, goes slowly and carefully through the whole of the report, finding fault with everything and everybody, suggesting nothing and making several egregious blunders in his facts. This same gentleman, I understand, makes this an annual duty, and enjoys the fun of seeing a body of impatient gentlemen all round him. For what purpose? I leave readers to guess. After this, up springs a young member, who seems to have a grievance against one of the examiners, and with stern look and flashing eye glared at one of the Council, and under pretext of enquiry into the reason of the Fellowship Degree being so little patronized, poured forth an essay on "Integrity," and, spite of the chair and the shouts of the majority of those present, finished up with a resolution that "one of the examiners was no longer a fit and proper person to be on the Board." Much as I admire the courage of this gentleman in thus persisting in what I doubt not *he* thinks a right thing to do, still I take it as quite outside the range of the Report, and surely in very questionable taste.

I am afraid I am trespassing on your space but, if you will allow me a few more lines, I would like to say a few words on two subjects that are now very much discussed among the profession—1st the dual appointment, 2nd the ix. clause. With regard to the former I have a very strong opinion that it would be a fatal mistake to alter the present arrangements. Why should the profession be restricted in its choice of men for the Council? And why on earth should the Council be restricted in its choice of men to act as examiners. Let us get the best men we can to represent us, and assuredly let us obtain the highest talent procurable to act for us in testing the proficiency of candidates for the diploma. It is playing the game very low to suggest that because a man is councilman he cannot act fairly as examiner, or vice-versa.

Then as to the ix. clause—It is all very well raising a great outcry about it, but members must bear in mind that the whole body of the profession had ample opportunity of decrying it before it was passed; they must also remember it was their own representatives on the Council who proposed it; they must further bear in mind that since its passage numbers of gentlemen have expended both time and money in working up for the Fellowship, and to them it would be a most unfair proceeding to do away with one of it principal privileges. Surely if any one is so anxious to be on the council, it is no great infliction to present themselves for the examination.

There is just one point on which I am in favour of a slight modification of the present clause—a point suggested to me the other week by a well-known veterinary surgeon. It is this, in the case of those veterinary surgeons who held their diplomas before the passing of the clause—they, I think, might be restored their privileges. For it must be remembered when the Fellowship degree was instituted a great many members were made Fellows without examination at all. These now are entitled to a seat on the Council, whilst their fellow practitioners are debarred the privilege. This is a point I should like to see discussed, for to my mind it might be made to settle what is now a very difficult problem.

With regard to the younger members (those who have passed since the Degree was instituted), they are not in the least affected by it. It imposes no more hardship on them than taking their diploma, and I would advise them to go in for the Fellowship as soon as they can.

In conclusion, I am pleased to see that we are gradually introducing new and progressive blood into our ruling body, and if members when voting

would exercise their own brains a little more and not be led so much, I venture to think in a short time we shall feel ourselves well represented.

V. S.

EXTRACTS AND NOTES.

ON THE DESTRUCTION OF MICRO-ORGANISMS DURING THE PROCESS OF INFLAMMATION IN QUARTER ILL.

By M. ARMAND RUFFER, M.A., M.D. Oxon.,

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The attention of pathologists has often been arrested by the fact that the introduction of a living contagium into animals give rise to lesions differing in intensity, naked-eye and microscopical appearances, according to the strength and quantity of the inoculated virus, and also according to the species, age, etc., of the animal into which the virus has been, accidentally or artificially, introduced.

Among the lesions consecutive to the subcutaneous inoculation of living virus, none present a greater interest than those met with at the spot where living micro-organisms have been introduced under the skin. In some infectious diseases, diphtheria, for example, the bacilli which are the primary cause of the disease are found in the diphtheric patch, that is, in the primary lension and there only. In other words, diphtheria is the type of a local infectious disease, the general symptoms being caused, secondarily, by the absorption of the poisons secreted by the specific bacilli of diphtheria. In other infectious diseases—tubercle, glanders, for example—the primary lesion is slight; the bacilli invade the system by stages, and produce well-marked local pathological changes in the glands, spleen, liver, lungs, etc.; in fact, in every organ in which, from mechanical or other reasons, the specific micro-organisms are temporarily arrested. Other micro-organisms, such as those of fowl-cholera when inoculated into non-resistant animals, give rise to no local symptoms whatever. The spot where the virus is introduced shows no signs of inflammation other than those produced by the slight wound; but if the spleen, liver, kidneys of the inoculated animal be examined shortly afterwards, the characteristic bacilli are found in enormous numbers in every one of these organs. The infective process has then become general.

Among the micro-organisms which, when inoculated into animals, produce well-marked naked-eye and microscopical lesions at the point of inoculation must be reckoned the characteristic bacilli met with in the disease generally called quarter-evil in this country (*charbon emphysémateux, Rauschbrand*). This disease, as Arloing, Cornevin, and Thomas have proved, is caused by a specific bacillus, to which these observers have given the name of *bacterium chauvoei*.[1] The bacilli are anaërobic organisms, and may be cultivated in beef broth or gelatine, provided these media have been freed from air by a stream of some inert gas such as hydrogen or ordinary coal gas. The bacilli closely resemble in appearance those of anthrax, but differ from the latter in being very motile, somewhat shorter and thicker. Lastly, the bacilli often contain well-defined spores at each end.

When inoculated subcutaneously into non-resistant animals, that is, in animals such as guinea-pigs, in which the disease ends fatally, the bacilli produce a highly characteristic lesion at the point of inoculation. The lesion consists of a tumour containing a large amount of more or less clear fluid, in which float a small number of amœboid cells. The neighbouring muscles are highly œdematous, owing to the presence of a large number of clear serous fluid and migrating cells. In guinea-pigs the whole process seems to end there, for, although the animal invariably dies when a sufficient number of bacilli are introduced under the skin, the characteristic pathogenic micro-organisms are found at the point of inoculation only and nowhere else.

The inoculation into guinea-pigs affords, on account of the constant strength of the virus, excellent opportunities for studying the processes going on at the seat of inoculation. Arloing, Cornevin, and Thomas have shown that the muscles of animals which have died of quarter-evil died at a temperature of 100° to 104° contain an attenuated virus. This virus, when inoculated into large animals, such as bullocks, produces a very mild form of the disease, from which these animals recover. By drying the virus at varying temperatures the same observers have obtained two kinds of virus, which I shall designate as A and B The virus A is the stronger of the two, and, provided sufficient quantities of it are used, its subcutaneous introduction into a guinea-pig is followed by death of the animal after a period varying from forty to forty-eight hours. The virus B, on the other hand, when inoculated in small quantities, is followed by a passing temporary and localised lesion. When enormous doses of B are introduced subcutaneously, death follows in four, five, or six days. These two kinds of virus, when contained in a well-stoppered bottle and in a dry place, keep their virulence for any length of time. The dose of virus to be used can be accurately weighed and by varying the strength and dose a mild or malignant, acute or chronic, form of the disease is produced at will.

By carefully studying the naked-eye and microscopical appearances of the point of inoculation, it is possible to answer the following question: "Is the inflammatory process going on at the seat of inoculation a protective process or not?" The answer to that question is, as we shall see, in the affirmative.

The next query then is: "By what process or processes is the animal body protected against the invasion of the pathogenic micro-organisms?" Theoretically speaking, there are four ways in which the body may be protected:

1. "The bacilli may not meet in the surrounding media with the physical conditions and chemical materials necessary to their existence." It is clear

that if micro-organisms do not find the necessary heat, moisture, and food, they must remain in the same latent condition as the dried virus. This is not the case, however. On the contrary, the bacilli are called into active life again as soon as they are introduced under the guinea-pig's skin.

2. "The tissues of the animal may mechanically impede the passing of the bacilli into the system." It is a well-known fact that certain tissues oppose a mechanical barrier to the entrance of pathogenic micro-organisms. If not abraded, the surface of a healthy skin, with its thick layer of epidermis, is not easily penetrated by microbes, and the same may be said of the dorsal surface of the tongue. On the othter hand, virulent bacilli, such as anthrax, which are endowed with slight power of movement only, when introduced under the skin, soon force their way through the loose meshes of the surrounding connective tissue into the neighbouring lymphatic or blood vessels. The bacillus of quarter-evil is endowed with considerable motility, and there is no reason to suppose that it could not penetrate into the blood or lymphatic vessels. The mechanical resistance of the surrounding tissues as a cause of immunity in this disease must, therefore be excluded.

3. "The liquids which during the process of inflammation pass out of the vessels may have a toxic influence on the pathogenic bacilli," or

4. "The amœboid cells present in the primary lesion may take a share in destroying the micro-organisms and arresting their progress."

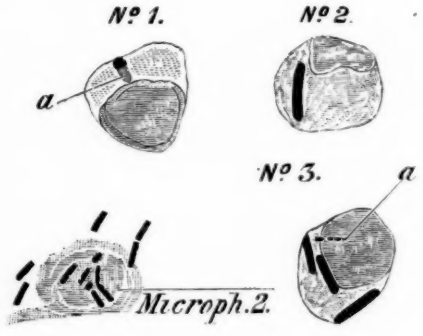
I propose to show that the liquids of the guinea-pig's organism, far from having a deleterious action on the micro-organisms of quarter-evil are, on the contrary, an excellent cultivating medium for the latter. Further, I hope to prove that the destruction and arrest of micro-organisms at the point of inoculation are due chiefly, if not solely, to the action of the amœboid cells present in the inflammatory effusion.

The animals used in my experiments were always adult guinea-pigs. The mode of inoculation was the following: The animal being under the influence of ether or chloroform the hair was cut with scissors, the abdomen or back shaved and thoroughly cleansed with soap and water and a strong (1 to 500) solution of corrosive sublimate. A small incision, about $\frac{1}{8}$ of an inch, was made with an aseptic knife, cutting through the skin and subcutaneous tissue until the muscular layer was exposed. The muscles were then separated from the subcutaneous tissue with the handle of the knife. A small but sufficient quantity of the powder, containing the strong virus (A), was introduced with the point of the knife between the muscles and subcutaneous connective tissue, the opening closed with a silk suture, cleaned with sublimate solution and covered with collodion. Needless to say, the small wound so made never showed the slightest trace of inflammation, and was always firmly healed by the next day.

At the end of from twelve to eighteen hours a small hard swelling is formed at the seat of inoculation. This tumour is evidently fluid, and crepitates on pressure as if its contents consisted of gas and fluid. The swelling increases in size, and soon becomes harder and more resistant. The parts surrounding it are then considerably thickened, the walls of the abdomen, for instance, feeling twice as thick as natural. After twenty-four hours or so, the animal shows evident signs of a general illness; it refuses food, does not run away when touched, gets more and more drowsy and generally dies just within a period of forty-eight hours after the inoculation. The *post-mortem* examination was always made within ten minutes of the death of the animal.

On examining the tissues at the spot where the inoculation had been made, the remains of the powder containing the virus are found lying in a kind of cavity which is full of almost clear fluid. The walls of this cavity are lined by a thin, greyish and fibrinous layer. The muscles surrounding the cavity are highly œdematous, so that on cutting through them, a large quantity (10 ccs. to 20 ccs. or more) of clear transparent fluid may be collected. This fluid is, occasionally, strongly tinged with hæmoglobin. The muscles and neighbouring parts present no other naked-eye changes.

The nearest lymphatic glands are sometimes slightly enlarged, but the other internal organs appear quite normal as a rule. Occasionally, there is a very slight enlargement of the spleen, together with congestion of the liver and kidneys. Sometimes, on the other hand, the latter organs appear to be somewhat paler than natural.



1. Microphage containing (*a*) partially digested bacillus. 2. Microphage containing two bacilli joined end to end. 3. Microphage containing bacilli; *a* represents a bacillus in the last stage of digestion.

Microph. 2, = microphage containing bacilli; from section of part of the abscess wall of a guinea pig which died forty-eight hours after the inoculation of virus A.

The microscopical appearances are, however, of far greater interest. To study them fully, the developement of the bacilli must be watched and the processes going on in the walls of the cavity containing the virus, in the surrounding muscles, and in other organs must be followed.

It has already been stated that the virus used is carefully dried, and, as bacilli require moisture in order to show any signs of life, we must suppose that their activity before inoculation is latent. If twelve hours after the inoculation, a sharp capillary

pipette is introduced into the centre of the tumour already formed, a little of the clear transparent fluid carefully drawn off and examined under the microscope, an enormous number of bacilli are found moving about in the liquid. Here and there a leucocyte is seen. As a rule the wandering cells met with at this stage are empty, but occasionally one holds two, three, or more bacilli in its interior (see Nos. 1, 2, 3.

A drop of the liquid in the tumour withdrawn and examined at the end of forty-eight hours, or immediately after the animal's death, contains an enormous number of free bacilli. The fluid, as a rule, is somewhat turbid, owing to the presence of wandering cells in fairly large numbers. These amœboid cells belong to the small variety (microphages), and are either uni- or multi-nucleated. The nuclei possess hardly any intranuclear net-work, and are surrounded by a small amount of protoplasm only. Many of these cells contain bacilli, some in enormous numbers, as many as ten micro-organisms being sometimes enclosed in one cell. The micro-organisms in the liquid show no signs of degeneration, while some of the bacilli contained in the amœboid cells have clearly undergone a process of digestion. Floating in the liquid are seen remnants of the dry blood used for the inoculation.

It would appear, therefore, that the fluid constituents of the inflammatory effusion, far from having any harmful or toxic effect on the bacilli, have, on the contrary, the power of stimulating the latter into active life. The bacilli seemingly find in the inflammatory fluid poured out around them all the conditions of heat, moisture, and food necessary to their existence. On the other hand, the amœboid cells of the inflammatory effusion have the property of taking into their interior and destroying bacilli.

In order to get a clear idea of the processes taking place in the wall of the cavity—which, for brevity's sake, I shall call the abscess wall—this part and a few millimètres of the surrounding tissues must be removed immediately after death.

On microscopical examination, the free aspect of the abscess wall is covered everywhere by an enormous number of bacilli, lying free in the coagulated exudation fluid, showing, to all appearances, no traces of degeneration.

The abscess wall itself consists of an innumerable number of small migrating cells. Some of these amœboid cells have but one single nucleus, others contain two, three, or four nuclei. In many the nucleus has the triradiate aspect found in other inflammatory conditions—for example, pneumonia. The amount of protoplasm round the nucleus is very small as a rule. Close to the free surface of the abscess wall these cells are pressed together in enormous numbers, and so closely packed that the contours of each are scarcely to be recognized.

In the deeper regions of the abscess walls the cells are massed together less closely. The muscular tissue around contains, within its meshes and between its fibres, a large number of small, round migrating cells. The latter are met with even in places where not a single bacillus is to be seen.

The number of micro-organisms in the deeper layers of the abscess wall at some distance from the free surface gradually becomes smaller and smaller, and whereas in the upper strata some micro-organisms are free between the cells, the bacilli in the lower strata of the abscess wall are almost always contained in the interior of microphages. Lastly, a few millimètres away from the free surface, although the number of migrating cells is still very large, no bacilli are to be seen, except, occasionally, the remnant of a dead micro-organism contained in an amœboid cell.

The presence of the bacilli of quarter-evil in the tissues of the guinea-pigs, therefore, gives rise to a most intense inflammatory process, characterised by the exudation of large quantities of liquid, and the emigration of an enormous number of amœboid cells. I have been unable to satisfy myself that the fixed cells of the connective tissue take any part whatsoever in the process of inflammation or in the destruction of micro-organisms.

In the first place, it is clear that the fluids present in the inflammatory exudation have no toxic influence whatsoever on the pathogenetic bacilli which give rise to the disease called "quarter-evil." Not only is there no evidence to show that the fluids have the power of destroying micro-organisms, but they seem to have a stimulating effect on their growth, for the latent bacilli contained in the strong virus (A) are called into activity as soon as the dried virus is bathed in the inflammatory fluids present at the spot where the virus is introduced. On microscopic examination, the bacilli are found to be motile and present the characteristic staining reactions of healthy micro-organisms.

In the second place, it is evident that the amœboid cells which migrate to the place where the virus is inoculated arrest the progress of the bacilli, and have the power of destroying them after taking them into their interior. The migrating cells, packed closely together, form a kind of living wall, through which micro-organisms can only penetrate with the greatest difficulty. Further, many lymphocytes contain bacilli in various stages of degeneration, and whereas enormous numbers of bacilli are present in the fluids of the inflammatory exudation, very few or none are found in the deeper parts of the tissue. The wall formed by the migrating cells has proved an almost impassable barrier to the micro-organisms. The localisation of the bacilli at the spot where they are introduced is, therefore, due to the action of the amœboid cells which have migrated to that point. In other words inflammation, in this disease, serves a useful purpose. Clinically, the local lesion produced is a sign that the animal organism is fighting against the entrance of micro-organisms into the system.

Conclusions.—1. The inflammatory process consecutive to the introduction of the bacilli of quarter-evil under the guinea-pig's skin is a protective process, and serves a useful purpose.

2. The destruction of micro-organisms at the point of innoculation is carried out entirely by the amœboid cells present in the inflammatory exudation.

British Medical Journal.

ROYAL (DICK) VETERINARY COLLEGE.

The Distribution of prizes to the students of the Royal (Dick) Veterinary College took place in the Council Chambers, Edinburgh, yesterday, in presence of a number friends of the College. Lord Provost Boyd presided.

The Lord Provost said he was very glad to find that the institution had during the past year not only maintained but increased its reputation. The attendance had been larger than ever, and the session had closed altogether in the most satisfactory way. He was glad to learn that in the opinion of the Professors, who were best able to judge, the actual standing of the various classes had been very satisfactory, and fully equal to anything they had seen in the past, and that the proficiency attained by the different classes had been very marked. He was also pleased to notice that the Fitzwygram prize of £50 had been gained by a student of the College, Mr. A. E. Mettam. (Applause.) He believed it had been very gratifying to the Professors that the conduct of the students during the session had been such as to meet with the utmost approval, and that everything had passed off most pleasantly on both sides. (Applause.) Principal Walley said it was right to point out that some of the competitions extended over the whole curriculum, a period of three years. He was pleased to say that the classes were much larger this year than ever before in the history of the College, and the A and B classes were so much in advance of last year, not only in numbers but in general intelligence, that some of the Professors had felt it incumbent upon them to give extra prizes. He had great pleasure in announcing that the gentleman who adjudicated upon the essays (Mr. John Malcolm, F.R.C.V.S., Birmingham) was so impressed with their value that he gave an extra medal to the second essayist. In previous years one or two of the students had taken most of the medals, but on this occasion they were more generally distributed. The Principal concluded by handing the prizes to the successful competitors.

The following are the medallists:—Veterinary Medicine and Surgery—Gold medal, W. P. Weston, Grantham; silver medal, A. Paterson, Ballater. Cattle Pathology—Gold medal, W. P. Weston; Silver medal, Arthur Breakell, Garstang, Lancashire. Anatomy (Senior)—Gold medal, W. Sturdy, Skellingthorpe, Lincolnshire; silver medal, W. M. Pye, Witherley, Atherstone. Anatomy (Junior)—Silver medal, P. L. Smyth, Dublin. Physiology—Gold medal, W. Stewart, Belfast; silver medal, W. M. Pye. Practical Pathology—Silver medal, A. Patterson. Materia Medica—Silver medal, W. P. Weston. Chemistry—Gold medal, A. Macfarlane, Doune; silver medal, T. G. Heatley, Winsford, Cheshire; bronze medals—P. L. Smyth, J. A. Hepburn, Milnathort, and C. R. Neale, Arbroath. Practical Chemistry—T. G. Heatley. Botany—Silver medal, G. W. Sturges, Billesden, Leicestershire; bronze medal, J. A. Hepburn. Practical Botany—Silver medal, T. G. Heatley. Certificates as Pharmacists—Arthur Breakell, W. P. Weston, W. Ackroyd, R. St. J. Walley, D. Stranaghan, L. H. Fairer, and W. J. McCartan. Bursary of twenty guineas for the highest percentage of marks gained in the various competitions held during the curriculum—A. Paterson. The Veterinary Medical Association's silver medal for the best essay—J. Higginson, Ruyton, XI Towns. Silver medal for the second best essay—R.. St J. Walley, Edinburgh. Silver medal for best communication—Arthur Breakell.

GLASGOW VETERINARY COLLEGE.

The winter session of this Institution terminated on 16th May.

Medals and certificates of merit were awarded in the different branches of study as follows, viz:—

Horse Pathology—Silver medal. William Logan, Ayr; first-class certificates. W. H. Davidson, S. R. Thompson, and A. Campbell.

Cattle Pathology—Silver medal, W. H. Davidson; first-class certificates. W. Logan, J. K. Bruce, and G. Waddell.

Practical examination of horses as to Age, Soundness, Operations, &c., (gold medal by Principal M'Call)—James Borrowman.

Practical Examination of Cattle and Sheep, as to Age, Soundness, Operations, &c., (gold medal by Mr. Campbell)—A. Renfrew.

Anatomy (Special and Comparative)—Silver medal, J. A. Gilruth; first-class certificates, J. E. Johnston and W. Marshall.

Physiology—Silver medal, J. A. Gilruth; first-class certificates, R. Campbell and J. Forrest.

Best Professional Examination in Anatomy (gold medal by the late Professor Allen Thomson)—J. D. Walker.

Junior Anatomy—Silver medal, J. Furniss.

Chemistry—Silver medal, G. Irvine; first-class certificates, J. Furniss; W. Dawson; A. M'Nairn; and J. Mackie.

Botany—Silver medals, W. Dawson and A. M'Nairn, equal.

Principal M'Call's bursary of £20, or a gold medal the value of that amount, for the student who obtained the higest aggregate marks in his first and second professional examinations before the Board of Examiners, was awarded to J. A. Gilruth.

NEW VETERINARY COLLEGE, EDINBURGH.

On Tuesday, May 20th, in the presence of the professors, students, and many friends, Professor W. O. Williams presented the medals and certificates to the successful candidates, and congratulated the students on their great attention and diligence dur- the past session. The following were the awards:—Principal's £20 prize (gold medal), Mr. E. Murray; Pathology of the horse—medal, Mr. C. Ward; certificates, 1st class, Messrs. J. H. Parker, J. Bate,

and W. Kendall ; 2nd class, Messrs. J. Brand, and A. M'Gregor. Pathology of the ox, sheep, pig, and dog—medal, Mr. W. Kendall ; certificates, 1st class, Messrs. J. Bate, J. Cockburn, and C. Ward ; 2nd class, Messrs. A. M'Gregor and E. Farm. Demonstrator of morbid Anatomy—medal, Mr. C. Ward. Practice—medals, Messrs. R. J. Bushnell, W. Sayles, and H. H. Baker ; certificates, Messrs. A. M'Gregor, E. Fern, and Maxwell. Curator of Museum—medal, Mr. H. H. Baker. Edinburgh Veterinary Medical Society—Best essay—medal, Mr. C. Ward ; certificate, Mr. E. Fern. Best communication—medal, Mr. J. H. Parker ; certificate, Mr. C. Murray. Senior Anatomy—medal, Mr. C. Haywood ; certificates, Messrs. J. M. C. L. Young, R. Johnstone, J. Carpenter, and A. G. Todd. Physiology—medal, Mr. C. Haywood ; certificates, Messrs. R. E. Johnstone. J. M. C. L. Young, J. Connochie, M. Fitzgibbon, and R. M. Pender. Histology—medal, Mr. C. Haywood ; certificates, Messrs. R. M. Pender, A. G. Todd, J. Farmer, M. Fitzgibbon and J. M. C. L. Young. Junior Anatomy, medal—Mr. O. C. Bradley ; certificates, Messrs. E. W. Anderton, A. P. Gribbon, J. M. Arthur, and H. G. Hewitson. Botany—medal, Mr. O. C. Bradley ; certificates, Messrs. A. P. Gribbon and F. Pearson. Chemistry—Highland and Agricultural Society's medal, Mr. O. C. Bradley. Professor Macadam's medal, Mr. F. B. Pearson. Practical Chemistry—equal medals, Messrs. O. C. Bradley and A. P. Gribbon. Veterinary Hygiene—Principal Williams' class—medal, Mr. L. R. Wilson ; certificates, Messrs. James M'Kinnel, A. H. Inman, and John Brown, Airdrie. Professor W. Owen Williams' class—medal, Mr. T. Parker Greenwood ; certificates, Messrs. James M'Kinnel, A. H. Inman, and L. R. Wilson.

BRITISH MEDICAL ASSOCIATION.

The annual Congress of the British Medical Association will this year be held in Birmingham during the last week in July Although more than two months must elapse before the meetings commence, the arrangements for the visit have already been actively considered, and sufficient progress has been made to enable us to say that the forthcoming Congress will be probably the most successful during the fifty-eight years of the existence of the association. It is eighteen years since the association last met in Birmingham, and the intervening period has been marked by a wonderful advance in medical science, and a corresponding improvement in the position of the association. In 1872—when Mr. Alfred Baker, who was the senior surgeon to the Birmingham General Hospital, was the president—the association only numbered 4,700 members, but now, out of some 23,000 medical men in active practice in the United Kingdom, about 16,000 are members of the association.

The programme of the proceedings as yet is only in skeleton form, but it contains sufficient to clearly demonstrate the fact that the week is to be one of work rather than pleasure.

The public medicine section will be especially interesting, particularly on the day when the subject of "The Inspection of Meat" is to be introduced by Professor Walley, of Edinburgh. This subject is of peculiar interest to veterinary surgeons, and the members of the Midland Veterinary Association will, in all probability, be invited to be present and take part in the discussion on Professor Walley's paper.

As 1,500 or 1,600 members are expected to visit Birmingham for the Congress the local committee will be much exercised in providing accommodation for them. It is believed that not more than 500 can be accommodated at the hotels, and therefore the committee will have to depend on private hospitality. An appeal must be made to the public, and ladies and gentlemen willing to entertain guests will confer a favour on the committee by communicating with the honorary local secretaries, Dr. Saundby, Mr. Jordan Lloyd, and Dr. Harvey.

ON SPECIALISM.

The narrowness of the mere specialist is to be guarded against in all departments of medicine. This truth ought to be remembered by the student, and by the young, as well as by the more advanced practitioner. The student is apt, even during his curriculum, to fall a victim to the cramping influence of specialism ; sometimes led on, it may be, by the dazzling results of a not too conservative operative surgery, to neglect or discount the careful study of physiology and pathology, he determines to devote himself in future exclusively to surgery, often forfeiting the opportunities during his student days of acquiring a thorough grounding in the principles of the entire range of professional subjects. He forgets that the practitioner who is the best qualified to pursue any particular branch of medicine or surgery is the man who during his whole course of systematic study endeavours, above all, to fit himself to become a thoroughly scientific physician or surgeon. The searching examinations of our various licensing boards for entrance to the profession tend to discourage specialism by exacting from candidates a thorough knowledge of the various departments. Soon after entering the professional ranks, however, the young practitioner perhaps determines to take up a special subject, selecting one according to natural bias, or sometimes from force of circumstances, especially if he settle in a large centre of population where specialists abound, and he slowly developes his particular subject, until possibly it entirely absorbs his energy, while a corresponding contraction of his mental vision results. This applies with greater force to the established specialist, who has for years continued an exclusive practice, and has more or less unconsciously developed this narrowness, which we so much deprecate. We do not mean to deny that, in these days of eager research and improved methods, division of labour in the healing art is not somewhat of a necessity ; but whilst the public may be to a certain extent a gainer by such division, it must be admitted that the result is not favourable to the development of medicine as a whole, or to the *morale* of its professors.—*Lancet.*

THE ETIOLOGY OF DIPHTHERIA.

At the ordinary meeting of the Royal Society on Thursday, May 22, a paper entitled "A Contribution to the Etiology of Diphtheria" was read by Professor Klein, F.R.S. It contained the substance of a research which had been undertaken for the Medical Department of the Local Government Board, and was communicated to the Society with the permission of the medical officer. The paper commenced by stating that the microbe of diphtheria had been first described by Klebs in 1883, and first grown in artificial cultures by Löffler, but that the author, in the report of the medical officer of the Local Government Board for 1889-90, had shown that two kinds of bacilli occur in diphtheritic membranes, the second of which is the more virulent of the two. This more virulent bacillus acts very powerfully upon guinea-pigs by subcutaneous injection, producing a local tumour which precisely resembles, both in pathology and in microscopic section, the diphtheritic membrane of the human subject. In human diphtheria the bacillus is present only in the diphtheritic membrane, but neither in the blood nor in the diseased viscera; and the same holds good with inoculated guinea-pigs. In subcutaneous inoculations with artificial cultures, although it causes in these animals disease and death, and although the lungs, intestines, and kidneys are greatly congested, the diphtheritic bacillus remains limited to the seat of inoculation; from whence it has been concluded that the diphtheritic membrane is the sole seat of multiplication of the bacillus, but that this produces a chemical poison which is absorbed into the system, and which causes the general diseased condition, and often death. Roux and Yersin have separated from artificial broth cultures the chemical products alone, and by injection of the latter into guinea-pigs have produced a general effect. In this year's report of the medical officer to the Local Government Board the author has shown that such injection of cultures into guinea-pigs produces an active multiplication of the bacilli at the seat of injection, and that they can be obtained in pure culture on gelatine both from the local tumour and from the nearest lymph glands.

On various occasions during the last three years the author has received information from health officers of a curious relation existing between a disease in cats and human diphtheria; such that a cat or cats were taken ill with a pulmonary disease, and when ill were nursed by children, and then these latter sickened with well-marked diphtheria. Or children were taken ill with diphtheria, and, either at the same time or afterwards, the cat or cats sickened. The disease in the cat was described as an acute lung trouble; the animals were quiet, did not feed, and seemed unable to swallow. In some cases they recovered; in others they became emaciated, while the lung trouble increased, and they ultimately died. In one instance the cat malady, occurring where children were soon after attacked by diphtheria, was of a wide spread nature; and *post-mortem* examination of the affected cats showed severe lung disease, broncho-pneumonia, and large white kidneys due to fatty degeneration of the entire cortex; a similar condition being also met with in the human subject as an effect of diphtheria.

Subcutaneous inoculations of cats were carried out with particles of fresh human diphtheritic membrane and with cultures of the diphtheritic bacillus, producing a local diphtheritic swelling at the seat of inoculation and a general visceral disease. In the cases in which death followed after a few days the lungs were found much congested; when death followed after one or more weeks the lungs showed broncho-pneumonia, and the kidneys were enlarged and white, the cortex being in a state of fatty degeneration. If the disease lasted beyond five to seven days both kidneys were found uniformly white in the cortex; if of shorter duration the fatty degeneration was sometimes only in patches. Although in these experiments the bacillus was recoverable by cultivation from the swelling at the seat of inoculations, no bacilli were found in the lungs, the blood, or the kidneys; and hence the conclusion is justified that, as in human diphtheria and in that produced by the inoculation of guinea-pigs, so in these experimental cats the visceral disease was a result of the action of a chemical poison, produced by the growth of the bacillus at the seat of inoculation.

From this it is seen that the similarity between the natural and the artificial disease in the cat is very great, and the question that arises is as to the manner in which the cat either receives or imparts the diphtheritic contagium in the natural disease. This natural disease in the cat is in its symptoms and pathology a lung disease, and it is reasonable to suppose from analogy that the lung is the organ in which the diphtheritic process in the cat has its seat. The microscopic examination of the diseased lungs of cats dying from the natural disease bears out this supposition, the correctness of which has also been proved by direct experiment. Broth culture of the special bacillus was introduced into the wind pipe in cats without injury to the mucous membrane. The animals became ill with acute pneumonia, and on *post-mortem* examination, from two to seven days later, there was found extensive pneumonia, and fatty degeneration of the kidneys. The air passages contained an exudation like that of human diphtheria, and the bacilli were present in large numbers.

During the last ten or twelve years several epidemics of diphtheria have been traced to milk, but the way in which the milk became contaminated with the diphtheritic virus was not ascertained, although the evidence was very strong that it had not been from a case of the disease in the human subject. The cows which yielded the milk were not reported to be unhealthy, except for having sores or chaps on their teats. The author has made experiments which appear to him to throw much light upon these outbreaks.

Two perfectly healthy milch cows, which had been kept under observation for ten days prior to the experiment, were inoculated with a broth culture of the bacillus derived from human diphtheria.

On the second and third days there was a soft tender swelling at the place of inoculation, which reached its *maximum* at the end of a week and then gradually became smaller and firmer. The animals had a raised temperature, and left off feeding on the second or third day, then to all appearance recovered

But on the eighth or tenth day they were attacked by a slight cough, which gradually increased. Both became emaciated; one died on the 15th day, the other was killed (being very ill) on the 25th day. During the illness both animals had an eruption on the teats and skin of the udder, which appeared in successive crops. From one of the cows on the 5th day milk was drawn from a healthy teat, the outside of the teat and the milker's hand having first been thoroughly disinfected. From this milk cultivations were made, and it was found that 32 colonies of the diphtheria bacillus, without any contamination, were obtained from a single cubic centimétre. Contrary therefore, to what happens in the guinea-pig and in the cat, the diphtheria bacillus passes from the seat of inoculation into the system of the cow, and makes its appearance in the milk. The presence of the bacillus in the eruption on the udder was also demonstrated, both by microscopic examination and by experiment. Two calves were inoculated with matter from this eruption, and both developed a similar one, besides becoming affected with severe broncho-pneumonia and fatty degeneration of the kidney. It therefore appears that a definite disease can be produced in the cow by the diphtheria bacillus, and the contamination of the milk shows that the bacillus, as such, invades the general system.

At the beginning of the month of April two cats died at the Brown Institution, after having been ill for several days, with symptoms like those of natural cat diphtheria. Between the beginning of April and the beginning of May 14 cats became similarly affected, some more severely than others, and some died with the characteristic morbid changes. This epidemic, as it may be called, commenced with the illness of the first two cats about the end of March; and the question arises as to how the disease originated in these two animals. No cats had been ill in their shed, and the two affected ones were healthy when received at the Institution some weeks before. But during the latter half of March there were in the stables of the Institution two milch cows ill with diphtheria induced by inoculation with the human diphtheria bacillus—in fact the two cows already referred to. The diphtheria bacillus was found in the milk drawn from one of these animals on the fifth day after inoculation, and orders were given to the attendant that the milk of both cows was to be thrown away. This order was not obeyed, for part of the milk was given to the two cats above mentioned, and they sickened as described within a day or two afterwards. It ought to be mentioned that the man in attendance on the cows had also charge of the cats, but, in view of the fact that he was himself free from the disease, the possibility of his having conveyed it from the cows to the cats may be disregarded.—*The Times, Monday May 26th.*

Amendment of Dog Order.

The London Gazette contains a Board of Agriculture order amending the dog muzzling order, so far as the extra-metropolitan portions of the counties of Essex, Hertford, Kent, and Surrey are concerned. It is announced that the requirements as to muzzling contained in the order of 1889 shall not apply to "Dogs which have on a collar with the name and address of the owner of the dog legibly engraved on such collar." In the metropolis the old order will still hold good. But the partial exemption named is granted, to give the list in its official form, to:—County of Essex (part outside the Metropolitan Police District); Borough of Colchester. County of Hertford (part outside the Metropolitan Police District); Borough of St. Albans. County of Kent (part outside the Metropolitan Police District); Borough of Canterbury; Borough of Dover; Borough of Folkestone; Borough of Gravesend; Borough of Maidstone; Borough of Margate; Borough of Ramsgate; Borough of Rochester; and Borough of Tunbridge Wells. County of Surrey (part outside the Metropolitan Police District); Borough of Guildford; and Borough of Reigate. A fact worth recording is that, according to departmental statistics, only one dog throughout the whole of England, reported to be affected with rabies, was killed last week, and that was in the West Riding of Yorkshire.

Importation of Live Cattle.

In all the leading cities of the United States cattle-shippers state that the total loss on shipping cattle to England during the present year has been at the rate of £50,000 weekly, owing to the fall in prices. The English market statistics as announced in the United States show a loss of £9 per head on all cattle shipped to England.—*Pall Mall Gazette.*

Our Presidential Election.

We learn, on good authority, that Professor McCall would not decline to stand for the Presidential election, and we hope that he will be elected unanimously.

Commission on Horse Breeding.

The third report of the Royal Commission on Horse Breeding has just been issued as a Parliamentary paper. The Commissioners express the opinion that the present method of applying the royal bounty, the giving of prizes at agricultural exhibitions, is likely to prove more efficacious in improving the breed of horses than when it was bestowed in the form of Queen's Plates.

They add:—"It has come to our knowledge that one of the results of the present scheme has been that some high-class stallions, which would otherwise have been purchased to go abroad, have been retained in this country, and some of the evidence which we have

taken points to the probability that by augmenting the grant, and by offering prizes for mares, a distinct inducement would be afforded to owners to retain the best young mares in the country." The report refers with regret to the withdrawal of the Royal Agricultural Society of the annual premiums, and suggests that it would be desirable to increase the number of premium stallions. and to offer prizes for mares which have been served by those stallions and prizes for young stock. The sum at the disposal of the Commissioners during the past two years was £10,200.

To the report is appended a memorandum by Mr. Chaplin, who says that he concurs with the general views expressed, and adds :—"There is every reason to believe, from all the information we receive, that the work of the Commission has already been attended by most encouraging results ; and that a great impetus has been given to horse-breeding in many districts of the country. The services of high-class stallions who have passed the ordeal of the severe examination to which they are submitted are eagerly sought after, while the breed is improved both in quality and class. The number of sound horses is being steadily increased, and I am strongly of opinion that an extended operation of the system would be attended with great public advantage."

Not in Britain.

"The Editor."—An American Schoolboy's composition on "The Editor" ran as follows "The Editor is one of the happiest beggars in the world. He can go to the circus in the afternoon and evening without paying a cent, also to inquests and hangings. He has free tickets to the theatre, gets wedding cake sent to him, and sometimes gets licked, but not often, for he can take things back in the next issue, which he generally does. While other folks have to go to bed early, the editor can sit up every night and see all that is going on."

CORRESPONDENCE.

THE DUAL APPOINTMENT.

Sir,

Many hard things have been said in the *Record* concerning plurality of offices, and the evils resulting from paid appointments being given to men who are councilmen, and therefore capable of voting for their own promotion.

It has been left to Professor Williams to give this arrangement it deadliest blow, and to state with sweet simplicity an intolerable danger and an unanswerable objection. At the meeting of the Yorkshire Veterinary Medical Association he said, "I have been a member of Council for twenty years and no doubt the expense it has been to me in attending the meetings, were the money in my pocket now, would amount to nearly £1,000. That expenditure has been purely and simply for the benefit of the profession at large. As a teacher I am excluded from being an examiner. If I were not excluded I might, as an examiner, in some measure have recouped myself for the pecuniary outlay I have been at. The only objection to the existing system is that the examiners appoint themselves." Brave professor! Let me welcome you as a convert, and hope you will convince others as well as—Yours,

"An Unpaid."

Veterinary Medical Societies—Addresses.

Border Counties V.M.S.
Pres: Mr. T. Greaves, F.R.C.V.S., Knott Mill, Manchester.
Hon. Sec: Mr. J. Armstrong, M.R.C.V.S., Penrith, Cumberland

Calcutta V.M.A.
Pres: Mr. Greenhill, M.R.C.V.S.
Hon. Sec: Mr. T. Assheton Smith, 156 Dhurrumtollah.

Central V.M.S.
Pres: Mr. William Hunting, F.R.C.V.S., 20 Fulham Road, London, S.W.
Hon. Sec: Mr. Sidney Villar, F.R.C.V.S., Harrow-on-the-Hill.
Meetings, First Thursday in each month, except August and September, First Avenue Hotel, Holborn, at 7 p.m.

Eastern Counties V.M.A.
Pres: Mr. E. J. Kitchin, M.R.C.V.S., Norwich.
Hon. Sec: Mr. R. S. Barcham, M.R.C.V.S., North Walsham.

Vet. Med. Assn. of Ireland.
Pres: Mr. C. Steel, F.R.C.V.S., 12 North-circular-road, Dublin
Hon. Sec: Mr. J. McKenny, M.R.C.V.S., 116 Stephens-green-west, Dublin.

Lancashire V.M.A.
Pres: Mr. W. A. Taylor, F.R.C.V.S., Brick-st., Manchester.
Hon. Sec: Mr. Peter Pike, M.R.C.V.S., Manchester.
Meetings, 2nd Wednesday in March, June, Sept., & Dec.

Lincolnshire V.M.S.
Pres: Mr. F. L. Gooch, F.R.C.V.S., Stamford, Lincolnshire
Hon. Sec: Mr. J. Smith, M.R.C.V.S., Huntingdon.

Midland Counties V.M.A.
Pres: Mr. F. W. Wragg, F.R.C.V.S. 17 Church Lane, London, E.
Hon. Sec: Mr. John Malcolm, F.R.C.V.S., Holiday-street Wharf, Birmingham.
Meetings, Second Friday in Feb., May, Aug., and Nov.

National Vet. Association.
Pres: Professor Pritchard, 5 Regents Park-road, London.
Sec: Mr. G. A. Banham, F.R.C.V.S., Downing-st., Cambridge.
Treas. and Chairman of Prov. Com: Mr. F. Wragg, F.R.C.V.S., 17 Church-lane, Whitechapel.
Local Sec: Mr. Sidney Villar, M.R.C.V.S., Harrow-on-the-Hill

North of England V.M.A.
Pres: Mr. J. W. T. Moore, F.R.C.V.S., 16 Albany Terrace, Whitley, Newcastle-on-Tyne.
Hon. Sec: Mr. W. A. Hancock, M.R.C.V.S., 2 Holly Avenue, Killingworth, Newcastle-on-Tyne.

Royal Counties V.M.A.
Pres: Mr. A. Wheatley, F.R.C.V.S., Reading, Berks.
Hon. Sec: Mr. H. Kidd, F.R.C.V.S., Hungerford, Berks.

Royal Scottish V.S.
Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.
Hon. Sec: Mr. W. D. Fairbairn, M.R.C.V.S., Cupar, Fifeshire

Scottish Metropolitan V.M.S.
Pres: Mr. H. Thompson, M.R.C.V.S., Aspatria, Cumberland.
Hon. Sec: Mr. Rutherford, M.R.C.V.S., 12 Bread Street, Edinburgh.

South Durham and North Yorkshire V.M.A.
Pres: Mr. J. Nettleton, Northallerton.
Hon. Sec: Mr. W. Awde, Stockton-on-Tees.

Southern Counties V.M.S.
Pres: Professor W. Pritchard, 5 Regents-park-road, London, N.W.
Hon. Sec: Mr. E. A. Hollingham, 79 Anerley Road, London, S.E

Western Counties V.M.A.
Pres: Mr. J. P. Heath, M.R.C.V.S., Southernhay, Exeter.
Hon. Sec: Mr. W. Penhale, F.R.C.V.S., Barnstaple, Devon.

West of Scotland V.M.A.
Pres: Mr. A. Robinson, F.R.C.V.S., 37 West Burn-street, Greenock, N.B.
Hon. Sec: Mr. James Weir.

Yorkshire V.M.A.
Pres: Mr. A. W. Briggs, M.R.C.V.S., Halifax.
Hon. Sec: Mr. W. F. Greenhalgh, M.R.C.V.S., Hunslet, Leeds.
Meetings, Last Friday in Jan., April, July, and October.